

Summary

Radians vs. Degrees

↓
naturally
occurring in circles

↓
Manmade by Babylonians

1 radian = 1 radius
of all circles

2π radians

(6 and a little more)

fit around the circumference
of a circle

3 incorrect assumptions

① sun orbits around Earth

② orbit is a circle

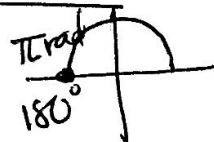
③ orbit takes 360 days

So 1 degree = 1 day

Converting Between Radians + Degrees

Conversion factor

$$\boxed{\pi \text{ rad} = 180^\circ}$$



Ex 1: Convert -270° to radians

$$\frac{-270^\circ}{1} \times \frac{\pi \text{ rad}}{180^\circ} = \frac{-270\pi}{180} = \boxed{-\frac{3\pi}{2} \text{ rad}}$$

Ex 2: Convert $\frac{4\pi}{5}$ radians to degrees

$$\frac{4\pi \text{ rad}}{5} \times \frac{180^\circ}{\pi \text{ rad}} = \frac{4 \cdot 180}{5} = \boxed{144^\circ}$$